

## Presidia Gel® Spray/Reflex Remove® Report of Medical Safety

The following report summarizes my findings, to the best of my knowledge and belief, on the medical safety of Presidia Gel and Reflex Remove. Contrasting information with oleoresin capsicum (OC) is also included.

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**Description:** Presidia Gel is a viscous liquid without noticeable odor. As reviewed, it is uniformly delivered in a tight stream. It is made of 2% Chlorobenzalmalononitrile (CS) and inert accelerants in nitrogen compressed gas.

**Flammability:** Presidia Gel is a non-flammable formula. It is safe to use with Electronic Restraint Devices (ERD), such as a Taser.

**Oxygen Displacement:** Presidia Gel does not displace oxygen. It can be used safely inside enclosed spaces.

OC pepper sprays or other forms of "tear gas" are aerosolized and thus displace oxygen when deployed. Normal measurement of atmospheric oxygen is 21%. A decrease to 17-19% can result in dizziness, disorientation, and loss of consciousness. The displacement of oxygen in connection with deployment of aerosolized pepper sprays or tear gas in an enclosed space therefore increases danger from asphyxiation, further enhanced in those suffering prior respiratory compromise (intoxication, drug use, asthma, emphysema, and other lung diseases).

**Respiratory System:** Presidia Gel has minimal inflammatory effects and very limited involvement of respiratory tissues. Unlike OC, it does not cause swelling of the throat, laryngeal tissues, bronchial lining, or the lungs. Presidia Gel is delivered as a non-aerosolized, non-atomizing liquid. The lack of airborne particulate limits cross-contamination risk and eliminates asphyxiation risk due to oxygen displacement because normal ambient oxygen percentile is not affected. This combination of features results in a markedly improved safety profile over aerosol OC and tear gas.

**Head and Face:** Presidia Gel does not cause damage to eyes, cornea, skin, mouth, tongue, respiratory tissues, or ears.

**Long-Term Effects:** There is no known toxicity associated with Presidia Gel. There have been no deaths associated with its use. There are no known long-lasting effects on human tissues. It is deemed safe to use on all individuals, even those with asthma and severe lung disease like emphysema.

**Short-Term Effects:** Presidia Gel has weak inflammatory effects. In the eyes, symptoms include superficial keratitis and conjunctivitis. On the skin, superficial irritation occurs but no blistering or ulceration. Allergic reaction is possible but very unusual. If ingested, gastrointestinal irritation may result, causing nausea and rarely vomiting.

2.8-10% of individuals sprayed with OC report symptoms severe enough to require medical attention, including: persistent dermatitis, dermal burns and blister formation, and severe respiratory compromise. OC is a potent activator of Substance P. This chemical results in vasodilation (dilation of blood vessels), which can result in low blood pressure and collapse. Cardiac (heart) excitability is inhibited which can result in bradycardia (slow heart rate), further increasing the risk of collapse necessitating medical intervention. It also results in bronchoconstriction (constriction of airways) resulting in profound coughing, gasping, choking, and shortness of breath. This effect is amplified in enclosed spaces and in those with lung disease. Bronchial/laryngospasm from OC exposure resulting in respiratory failure has occurred. Intubation, mechanical ventilation, pulmonary edema, and death have been reported. **The foregoing OC symptoms and outcomes have not been reported nor, in the opinion of the author, are biochemically possible with Presidia Gel.**

**California Proposition 65:** Presidia Gel does not contain any substance known in the state of California to cause cancer, developmental, and/or reproductive harm.

## Reflex Remove (NCS Fast) Decontaminant Solution and Spray

**Description:** Reflex Remove is a clear, colorless liquid with a slight orange scent.

**Ingredients:** Surfactants, cleaning mixture, and water. Note: Author is informed that a patent application is pending for the otherwise trade secret formula, but the Lead Chemist represents and warrants the formula as novel yet benign as baby shampoo.

**Long-Term Effects:** None known.

**Short-Term Effects:** None known. Reflex Remove is considered safe for all individuals regardless of medical comorbidities. No observed serious reactions as a result of decontamination maintained.

**Decontamination Effectiveness Re: Presidia Gel:** The efficacy of Reflex Remove appears profound. There is noticeable improvement within several seconds of application and a dramatic improvement within 2 minutes when used as instructed. Use of a single (5 oz) liquid bottle or aerosol spray version of the product sufficed for individual decontamination in testing.

OC decontamination is historically problematic. There is no effective antidote. Symptomatic treatment via copious irrigation with water or saline, employment of soap and water, and removal of the sprayed individual from an enclosed space to fresh air is indicated. Such treatment requires the availability of a substantial water source and can require significant time, personnel, and attention. As such, decontamination may not even be feasible, resulting in excessive pain and suffering of the subject.

**California Proposition 65:** Reflex Remove does not contain any substance known in the state of California to cause cancer, developmental, and/or reproductive harm.